The presence of four simple history features can diagnose migraine accurately

Synopsis

Summary of: Detsky ME, McDonald DR, Baerlocher MO, Tomlinson GA, McCrory DC, Booth CM (2006) Does this patient with headache have migraine or need neuroimaging? *JAMA* 296: 1274–1283. [Prepared by Chris Maher, CAP Co-ordinator.]

Question: Can the clinical assessment distinguish patients with migraine from those with other types of headache? ***Methods:*** Systematic review of diagnosis studies. ***Data sources:*** The MEDLINE database was searched for the years 1966 to November 2005. This was supplemented by citation tracking and inspection of bibliographies of texts. ***Study selection and assessment:*** Two authors independently assessed study eligibility, study quality, and extracted data. Studies were eligible for inclusion if they assessed diagnostic accuracy of history and physical examination tests, alone or in combination, and the reference standard was the diagnosis of a migraine-type headache made by a neurologist following the International Headache Society criteria. ***Outcomes:*** Diagnostic accuracy was expressed as likelihood ratios (LR) with 95% CI. ***Main results:*** Four eligible studies were located, two studying patients referred to headache specialists and two studying primary care patients. The two specialist studies were of very low methodological quality and there were concerns about data analysis and adequacy of the reference standard. The first primary care study was of high quality and evaluated a screening tool comprising five criteria: **P**ulsatile quality, duration 4–72 h**O**urs, **U**nilateral location, **N**ausea/vomiting, **D**isabling intensity (mnemonic = **POUND**). The presence of four or more features provided a LR of 24 (95% CI 1.5 to 388) in diagnosing definite or possible migraine and a LR of 5.8 (95% CI 2.7 to 12) for a diagnosis of definite migraine. Including the features photophobia, phonophobia, and exacerbation with the five POUND criteria algorithm did not improve diagnostic accuracy. The other primary care study was of fair quality and found that the presence of two or more of the features: disabling headache, nausea, and sensitivity to light, gave a LR+ of 3.2 (95% CI 2.7 to 3.9) and LR– of 0.25 (95% CI 0.22 to 0.28). ***Conclusions:*** A screening tool comprising five criteria: **P**ulsatile quality, duration 4–72 h**O**urs, **U**nilateral location, **N**ausea/vomiting, **D**isabling intensity, remembered using the mnemonic 'POUND', can accurately diagnose migraine.

Commentary

As primary contact practitioners physiotherapists should be able to diagnose migraine accurately so they can direct the patient towards appropriate management. Primary headaches such as migraine, cluster headache, and tension-type headache are diagnosed by identification of symptom complexes as detailed in the International Headache Society criteria (IHS 2004). Appropriate management of migraine usually addresses central and/or peripheral mechanisms of this headache type. Prescription medications have been shown to be effective for relieving the acute migraine attack (McCrory and Gray 2003) and for prevention of attacks (Chronicle and Mulleners 2004). Manual therapy to address musculoskeletal impairments that may be present may also be effective in preventing attacks (Bronfort et al 2004).

Detsky et al contend that the IHS criteria for migraine without aura are too cumbersome and present their POUND mnemonic as a simpler clinical alternative. The reported likelihood ratio (LR) of 24 means that a positive test is 24 times more likely in a headache patient with migraine than in someone without migraine. The clinical utility of this tool can be shown by calculating the probability that a patient who fulfils the criteria has migraine. To do this it is first necessary for the clinician to estimate the pre-test probability that the headache is due to migraine. It has been reported that 14% of patients presenting to physiotherapy practices for treatment of their headaches have migraine (Quin and Niere 2001). From this, it can be calculated that if a patient presenting to physiotherapy fulfils 4 of the 5 POUND criteria the probability that they have migraine is 80% (post-test probability). If other clinical information (eg, positive response to triptans or absence of comparable musculoskeletal impairment and red flags) increases the pre-test probability of migraine to an estimated 50%, then the post-test probability of definite or probable migraine would be 96%.

In summary, clinicians can confidently use the POUND mnemonic to diagnose migraine without aura, particularly if used in conjunction with other clinical information.

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References

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Quin A, Niere K (2001) Proceedings of MPA 12th biennial conference, pp. 34–37.